

Notice of Allowability

Application No.

10/623,680

Examiner

John S. Chu

Applicant(s)

FUJITA ET AL.

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/8/04.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

John S. Chu
Primary Examiner
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REASONS FOR ALLOWANCE

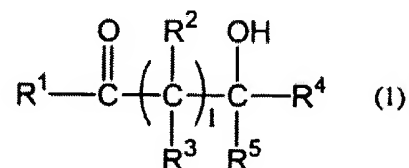
1. The following is an examiner's statement of reasons for allowance: The claimed invention is drawn to the following:

1. (Original) A photosensitive resin precursor composition comprising:

(a) a heat resistant resin precursor polymer;

(b) a radiation sensitive compound; and

(c) a solvent expressed by formula (1):



wherein R^1 represents an alkyl group having a carbon number in the range of 1 to 3, R^2 , R^3 , R^4 , and R^5 are each selected from among hydrogen and alkyl groups having carbon numbers in the range of 1 to 3, and l represents an integer in the range of 0 to 3.

and

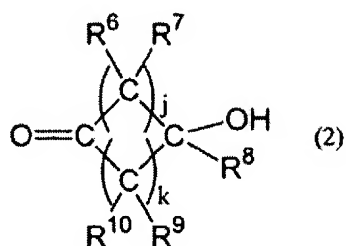
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2. (Currently Amended) A photosensitive resin precursor composition according to ~~Claim 1~~, wherein the solvent is comprising:

(a) a heat resistant resin precursor polymer;

(b) a radiation sensitive compound; and

(c) a solvent expressed by formula (2):



wherein R⁶ to R¹⁰ are each selected from among hydrogen and alkyl groups having carbon numbers in the range of 1 to 3, and j and k are each an integer in the range of 0 to 3 and satisfy the relationship $j + k \geq 2$.

The inventive step is the use of the solvent as expressed by the formulae (1) or (2). The closest prior art recently located include the disclosure to OKANUMA et al. The reference discloses suitable organic solvents that include diacetone alcohol, which meets the solvent of formula (1). The reference discloses suitable solvents for dissolving the photosensitive materials in Examples 1 and 13. These solvents used in the Examples include N-methyl-pyrrolidone (NMP) and γ -butyrolactone (GBL) which are listed in the specification at column 18, lines 1-18. The skilled artisan is motivated to use any of the listed solvents to dissolve the photosensitive composition, thus making the claimed invention *prima facie* obvious to the skilled artisan to

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reasonably expect same or similar results as disclosed in the Examples when using any of the listed solvents in column 18.

Applicants in their comparative examples include N-methyl-pyrrolidone and γ -butyrolactone and compare it to the claimed solvents. The comparative results demonstrate unexpected results with respect to range (um) in the inventive compositions for instance DAA(diacetone alcohol) demonstrates a lower range of 0.19 to those using NMP or GBL as the solvent, 0.48 and 0.63, respectively.

Because the comparative examples demonstrate unexpected results with respect to range, any rejection under 35 U.S.C. 103 over OKANUMA et al would be overcome for the secondary considerations. Accordingly, claims 1-12 are seen as allowable over the prior art of record and all the claims are passed to issue.

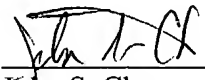
2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.



John S. Chu
Primary Examiner, Group 1700

J.Chu

June 18, 2004